CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-2018-03-28-06** **Date: 31-03-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub division, BBMP, Bangalore.
Address	:	Dasarahalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Rajareddy layout Soundarya School opp road in Bagalagunte ward no.14
Agency	:	The Technical Manager, KRIDL, Project Implementation Unit, No.280, 59th cross, 17 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer's Reference	:	EE/DD/WO/376/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	28-03-18
Sample ID No	:	2018-03-28-06/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	29-03-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**66**	60 to 70
2	Softening Point, °C	**52.4**	Min. 40°C
3	Ductility, cm	**91**	Min. 75cm
4	Flash point, °C	**233**	Min. 220°C
	Fire point, °C	**251**	

Note:
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ಟಿ.ದಾಸರಹಳ್ಳಿ ಉಪ-ವಿಭಾಗ
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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2018-04-04-01** **Date: 06-04-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub division, BBMP, Bangalore.
Address	:	Dasarahalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Rajareddy layout Soundarya School opp road in Bagalagunte ward no.14
Agency	:	The Technical Manager, KRIDL, Project Implementation Unit, No.280, 59th cross, 17 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer Reference	:	EE/DD/WO/376/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-04-18
Sample ID No	:	2018-04-04-01/01
Type of Mix	:	BM-Plant (Bituminous Macadam)
Date of test		04-04-18
Weight of Sample(gm)	:	5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	162	162	3.2	96.8	90-100
13.2	524	686	13.7	86.3	56-88
4.75	2735	3421	68.4	31.6	16-36
2.36	915	4336	86.7	13.3	4-19
0.3	413	4749	95.0	5.0	2-10
0.075	166	4915	98.3	1.7	0-8
PAN	85	5000	100.0	0.0	0

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2018-04-10-01**	**Date: 13-04-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub division, BBMP, Bangalore.	
Address	:	Dasarahalli Sub division, BBMP, Bangalore.	
Project Name	:	Improvements to roads and drains at Rajareddy layout Soundarya School opp road in Bagalagunte ward no.14	
Agency	:	The Technical Manager, KRIDL, Project Implementation Unit, No.280, 59th cross, 17 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.	
Customer Reference	:	EE/DD/WO/376/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	10-04-18	
Sample ID No	:	2018-04-10-01/01	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	10-04-18	

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	12.4		
Strength	Aggregate Impact Value	23.6	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.64	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.23	Maximum 2%	IS:2386 Part III

Note:

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Page 1/1
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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-04-10-01** **Date: 13-04-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub division, BBMP, Bangalore.
Address	:	Dasarahalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Rajareddy layout Soundarya School opp road in Bagalagunte ward no.14
Agency	:	The Technical Manager, KRIDL, Project Implementation Unit, No.280, 59th cross, 17 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer Reference	:	EE/DD/WO/376/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	10-04-18
Sample ID No	:	2018-04-10-01/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	10-04-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.43	11.35	10KN(min)
2	Marshal flow at 60°C, mm	3.26	3.22	2-4
3	Percent air Voids	4.29	4.76	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.33	14.45	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.38	71.25	65-75
6	Density, g/cc	2.24	2.27	–

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2018-04-18-01**	**Date: 20-04-18**
Customer	:	Assistant Executive Engineer, Dasarahalli Sub division, BBMP, Bangalore.	
Address	:	Dasarahalli Sub division, BBMP, Bangalore.	
Project Name	:	Improvements to roads and drains at Rajareddy layout Soundarya School opp road in Bagalagunte ward no.14	
Agency	:	The Technical Manager, KRIDL, Project Implementation Unit, No.280, 59th cross, 17 'C' main road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.	
Customer Reference	:	EE/DD/WO/376/2017-18	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	18-04-18	
Sample ID No	:	2018-04-18-01/01	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	18-04-18	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	501
2	Weight of the sample After extraction	B	468	469
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6.40	6.39
4	Average percentage	%	6.4	

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Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Lab ID : **CP-RW-2018-04-18-01** **Date: 20-04-18**

Sample ID : **2018-04-18-01/01**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 468

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	8	8	1.7	98.3	90-100
9.5	78	86	18.4	81.6	70-88
4.75	99	185	39.5	60.5	53-71
2.36	78	263	56.2	43.8	42-58
1.18	42	305	65.2	34.8	34-48
0.6	18	323	69.0	31.0	26-38
0.3	29	352	75.2	24.8	18-28
0.15	45	397	84.8	15.2	12-20
0.075	48	445	95.1	4.9	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 469

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	6	6	1.3	98.7	90-100
9.5	81	87	18.6	81.4	70-88
4.75	101	188	40.1	59.9	53-71
2.36	75	263	56.1	43.9	42-58
1.18	42	305	65.0	35.0	34-48
0.6	21	326	69.5	30.5	26-38
0.3	25	351	74.8	25.2	18-28
0.15	48	399	85.1	14.9	12-20
0.075	49	448	95.5	4.5	4-10

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